

### **REMARKS**

Claims 1-5, and 7-14 are pending in the present application. Claim 6 has been canceled; and claims 1-5 and 7-14 were amended. Reconsideration of the claims is respectfully requested.

Independent claims 1, 7, 11, and 14 have been amended to recite a feature in which a determination of whether to establish a transmission control block for a client unit is made by evaluating an incremented value of the Initial Sequence number Receiver side included in the ACK message, and to recite the limitation that the Initial Sequence number Receiver side is embedded with connection parameters as described in the subject application (See Page 5, Lines 10-20; Page 12, Lines 13-20; and Page 14, Lines 3-6 and Lines 11-21). Additionally, claims 1-5 and 7-14 have been amended to correct various informalities in the claim language. No new matter has been introduced by the amendments to claims 1-5 and 7-14.

Applicants thank the examiner for the interview on Tuesday, September 07, 2004. During the interview, the following points were discussed:

#### **I. 35 U.S.C. § 102, Anticipation**

The examiner has rejected claims 1-14 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,958,053 to Denker (hereinafter Denker). This rejection is respectfully traversed.

With respect to this rejection, a prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218, U.S.P.Q. 781 (Fed. Cir. 1983). In this particular case, each and every feature of the presently claimed invention is not identically shown or described in *Denker*, arranged as they are in the claims.

For example, amended claim 1 recites the following:

1. (Currently Amended) A method for defeating, in a server unit of an Internet Protocol network, a SYN flooding attack, said server unit running Transmission Control Protocol to allow the establishment of one or more transmission control protocol connections with one or more client units, said method comprising the steps of:
  - upon having activated the transmission control protocol in said server unit, listening for the receipt of a SYN message sent from a client unit;
  - upon receiving said SYN message, computing an Initial Sequence number Receiver side, wherein said Initial Sequence number Receiver side is embedded with connection parameters specified in the SYN message;
  - responding to said client unit with a SYN-ACK message including said Initial Sequence number Receiver side;
  - resuming to said listening step; and
  - responsive to receiving an ACK message, determining whether to establish a transmission control block for the client unit by evaluating an incremented value of the Initial Sequence number Receiver side included in the ACK message.

With regard to claim 1, the Office Action states the following:

As to independent claim 1, "A method for defeating, in a server unit of an IP (Internet Protocol) network, a SYN flooding attack, said server unit running TCP (Transport Control Protocol) to allow the establishment of one or more TCP connections with one or more client units, said method comprising the steps of: upon having activated TCP in said server unit:" is taught in '053 col. 4, lines 44-55;

"listening for the receipt of a SYN message sent from one said client unit" and "resuming to said listening step" is shown in col. 6, lines 59-60;

"upon receiving said SYN message: computing an ISR (Initial Sequence number Receiver side); responding to said client unit with a SYN-ACK message including said computed said ISR" is disclosed in col. 4, lines 58-64.

Office Action dated June 7, 2004, pages 2-3.

Applicants respectfully disagree. For example, Denker recites the following:

In the TCP2B protocol according to an embodiment of the present invention, the client requests a TCP connection with a server using a SYN message. The client *indicates its support for the TCP2B protocol* of the present invention using one or more bits of the TCP header (such as the OPT field)...In response to the SYNACK message indicating the server's support for TCP2B, the client sends an ACK message to the server. This ACK message (*in addition to the*

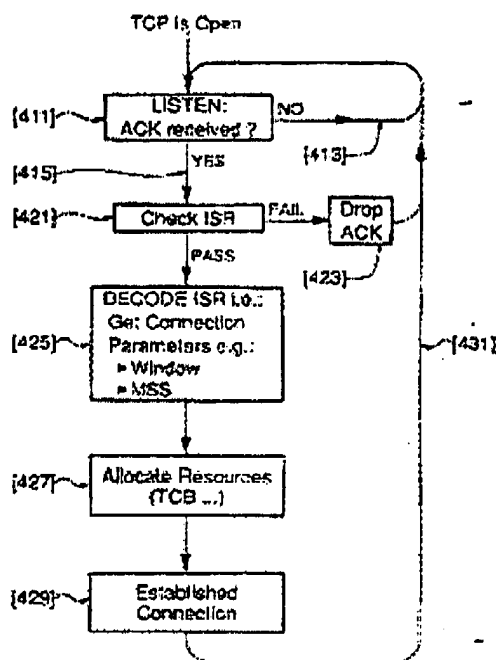
*information required by standard TCP) includes the encoded value and repeats the client's requested options. The server then analyzes the encoded value in the ACK message to determine if it passes the appropriate mathematical (i.e., cryptologic) test. If the encoded value included in the ACK message passes the appropriate mathematical test, then the client is properly complying with the TCP2B protocol, and the server allocates a full Transmission Control Block in memory, and the connection becomes fully established. (emphasis added)*

Denker, Column 4, Lines 53-Column 5, Line 8

Thus, the mechanism for protecting against a SYN flood attack provided by Denker is explicitly described as requiring information "in addition" to that "required by standard TCP." Particularly, information that is required in addition to standard TCP information is an "encoded value in the ACK message" that is returned to a server during the handshake process. Additionally, the client must indicate "its support of a" TCP variant, e.g., TCP2B, for the evaluation to proceed. A server then allocates a transmission control block in memory only after an indication that the client supports the TCP variant and after analyzing "the encoded value" that is transmitted to the server in addition to the standard TCP information. Thus, Denker fails to describe or suggest a mechanism for embedding an initial sequence number receiver side "with connection parameters specified in the SYN message" and for "determining whether to establish a transmission control block for the client unit by evaluating an incremented value of the Initial Sequence number Receiver side included in the ACK message" in response to receiving an ACK message from the client. Rather, Denker determines whether to establish a transmission control block for a client *responsive to* receiving both an indication that the client supports a TCP variant and an encoded value that is in addition to standard TCP information.

As described in the present application, a determination of whether to establish a transmission control block is made by evaluating the incremented value of the initial sequence number receiver side (ISR) as is normally provided by a client running standard TCP when returning an ACK message in response to receiving a SYN-ACK from a server. Connection parameters are embedded in the initial sequence number receiver side that is provided to the client thus enabling the server to determine "whether to establish a transmission control block for the client unit by evaluating" "the Initial Sequence number Receiver

side" that is incremented by the client (See Page 5, Lines 10-20; Page 12, Lines 13-20; and Page 14, Lines 3-6 and Lines 11-21). Thus, the evaluation is made without any modification or supply of additional data by the client. For example, Figure 4-b of the subject application shows the following:



As can be seen, the server pass or fails an ACK message by checking the ISR returned to the server by the client (step 421). Moreover, the ISR returned by the client is "incremented by 1 as protocol calls for" thus facilitating SYN flood attack protection on a client running standard TCP (see Page 14, Line 3-4). Thus, as described and claimed by amended independent claim 1, the determination of whether to establish a transmission control block for the client is made by checking the incremented initial sequence number receiver side included in an ACK message provided by a client running in accordance with standard TCP.

Amended independent claims 7, 11, and 14 recite similar features as amended claim 1. Therefore, the same distinctions between Denker and the claimed invention in claim 1 apply for these claims. For the reasons described above, Denker does not contain all elements of independent claims 1, 7, 11 and 14. Hence, Denker fails to anticipate the

present invention as recited in claims 1, 7, 11 and 14. Since claims 2-5 depend from claim 1, claims 8-10 depend from claim 7, and claims 12-13 depend from claim 11, the same distinctions between Denker and the claimed invention in independent claims 1, 7, and 11 apply for these claims. Additionally, claims 2-5, 8-10, and 12-13 claim other additional combinations of features not suggested by Denker. Consequently, it is respectfully urged that the rejection of claims 1-5 and 7-14 have been overcome.

Therefore, the rejection of claims 1-5 and 7-14 under 35 U.S.C. § 102 has been overcome, and such a notice is respectfully requested.

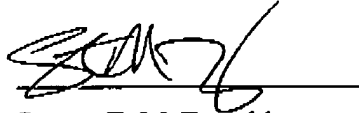
## II. Conclusion

It is respectfully urged that the subject application is patentable over Denker and is now in condition for allowance.

The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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